# Comparison between Citrus sinensis flowers and Mentha spicata leave essential oils inhalation on lung function and exercise performance among a group of athlete students

Submission date	Recruitment status No longer recruiting	<ul><li>Prospectively registered</li></ul>		
10/06/2016		☐ Protocol		
Registration date	Overall study status	Statistical analysis plan		
20/09/2016	Completed	[X] Results		
Last Edited	Condition category	[] Individual participant data		
20/10/2017	Other			

### Plain English summary of protocol

Background and study aims

Recently, there has been a lot of interest in the effects of essential oils on athletic performance and health. Essential oils are natural oils which are taken from plants and other natural sources. They have been used for many years in alternative medicine, as they are thought to help improve the function of the mind and body. This study will look at oils from the Citrus sinensis (sweet orange) flower and Mentha spicata (spearmint) leaves to find out if they are able to improve lung function and athletic performance in healthy male athletes.

### Who can participate?

Healthy male university students aged between 18 and 20 from the faculty of physical education at An-Najah National University in Nablus-Palestine.

### What does the study involve?

Participants are randomly allocated to one of two groups. Those in the first group inhale M. spicata oil mixed with 2ml of normal saline (salt water) which has been turned into a vapor. Those in the second group inhale C. sinensis flower oil mixed with 2ml of normal saline (salt water) which has been turned into a vapor. Before and five minutes after inhalation, participants complete a breathing test using a spirometer (devise used for measuring the about of air breathed in and out) to test their lung function. In addition, before and after inhalation, participants run 1500 metres in a stadium to find out if inhaling the oil has improved their athletic performance.

What are the possible benefits and risks of participating?

Participants may benefit from improved lung function and athletic performance as a result of taking part in the study. There are no notable risks involved with taking part in this study.

Where is the study run from?
An-Najah National University (Palestinian Territory)

When is the study starting and how long is it expected to run for? April 2016 to October 2016

Who is funding the study? Investigator initiated and funded (Palestinian Territory)

Who is the main contact? Dr Nidal Jaradat nidaljaradat@najah.edu

## Contact information

### Type(s)

Scientific

#### Contact name

Dr Nidal Jaradat

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## Additional identifiers

#### Protocol serial number

1/May/ 2016

## Study information

#### Scientific Title

The effect of Inhalation of Citrus sinensis flowers and Mentha spicata leave essential oils on lung function and exercise performance: a quasi-experimental uncontrolled before-and-after study

### Study objectives

The aim of this study is to compare the effects between the Citrus sinensis flower and Mentha spicata leaves essential oils inhalation among a group of athlete male students on their lung functions

### Ethics approval required

Old ethics approval format

### Ethics approval(s)

Institutional Review Board (IRB) at An Najah National University, 03/05/2016, ref: 1/May/2016

### Study design

Single-centre randomised parallel trial

### Primary study design

Interventional

### Study type(s)

Diagnostic

### Health condition(s) or problem(s) studied

Exercise performance and lung function

#### Interventions

Twenty male university students from the faculty of physical education at An-Najah National University in Nablus-Palestine will be randomly assigned into two different groups. The study is single blind participant level.

Group 1: Participants will nebulize with M. spicata oil (0.02ml/kg of body mass of oil) mixed with 2ml of normal saline.

Group 2: Participants will nebulize with C. sinensis flower oil (0.02ml/kg of body mass of oil) mixed with 2ml of normal saline.

Participants in both groups completed a 1500m run test in a stadium race before and after inhalation of the oils, they inhaled the oils 5 minutes before running. Lung function tests are undertaken using a spirometer before and after inhalation.

### Intervention Type

Other

### Primary outcome(s)

Lung function is measured using spirometry before and 5 minutes after inhalation of volatile oil.

## Key secondary outcome(s))

Athletic performance is measured using a 1500 meter run test before and after inhalation of volatile oil.

### Completion date

01/10/2016

## Eligibility

### Key inclusion criteria

- 1. Healthy
- 2. Male university students from the faculty of physical education at An-Najah National University in Nablus-Palestine
- 3. Aged between 18-20 years

### Participant type(s)

Healthy volunteer

### Healthy volunteers allowed

No

### Age group

Adult

### Lower age limit

18 years

### Upper age limit

20 years

### Sex

Male

### Key exclusion criteria

Suffering from any disease

### Date of first enrolment

22/06/2016

### Date of final enrolment

22/07/2016

## Locations

### Countries of recruitment

Palestine, State of

### Study participating centre An-Najah National University

West Bank Nablus Palestine, State of 00970

## Sponsor information

### Organisation

An-Najah National University

**ROR** 

## Funder(s)

## Funder type

Other

### Funder Name

Investigator initiated and funded

## **Results and Publications**

Individual participant data (IPD) sharing plan

### IPD sharing plan summary

Available on request

## **Study outputs**

Output type	<b>Details</b> results	Date created Date added Peer reviewed? Patient-facing?		
Results article		22/09/2016	Yes	No
Participant information sheet	Participant information sheet	11/11/2025 11/11/20	)25 No	Yes